

A new *Epilepton* species (Bivalvia, Montacutidae) from the Western Mediterranean

Una nueva especie de *Epilepton* (Bivalvia, Montacutidae) para el Mediterráneo Occidental

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Recibido el 3-II-1997. Aceptado el 15-VI-1998

ABSTRACT

Epilepton parrussetensis spec. nov. (Bivalvia, Montacutidae) is described from sediments dredged in a white coral biocenosis off Vallcarca (Sitges, Barcelona, NW Mediterranean), at a depth of 250-350 m. This small species is assigned to the genus *Epilepton* on the basis of shell morphology and hinge structure, and it is compared to *Epilepton clarkiae* (Clark W., 1852) and *Mancikellia divae* van Aartsen and Carrozza, 1997. The latest species is transferred to the genus *Epilepton*.

RESUMEN

Se describe *Epilepton parrussetensis* spec. nov. (Bivalvia, Montacutidae) a partir de material proveniente de sedimentos dragados en una biocenosis de coral blanco a profundidades entre 250 y 350 m, frente al litoral de Vallcarca (Sitges, Barcelona, Mediterráneo occidental). Esta pequeña especie se asigna al género *Epilepton* basándose en la morfología de la concha y la estructura de la charnela, y se compara con *Epilepton clarkiae* (Clark W., 1852) y *Mancikellia divae* van Aartsen and Carrozza, 1997. Esta última especie es transferida al género *Epilepton*.

KEY WORDS: Leptonacea, Montacutidae, *Epilepton* spec. nov., W Mediterranean.

PALABRAS CLAVE: Leptonacea, Montacutidae, *Epilepton* spec. nov., Mediterráneo occidental.

INTRODUCTION

The genus *Epilepton* was proposed by DALL (1899) for the species *Lepton clarkiae* Clark W., 1852 (type species by original designation), a small species of Leptonoidea living on the sublittoral in association with various species of sipunculid (PELSENER, 1925; DEROUX, 1961). *E. clarkiae* has been included in several families (i. e. Leptonidae, Montacutidae, or Neolepto-

nidae) on the basis of shell morphology. An anatomical study of this small Leptonoidea is reported by DEROUX (1961: 147-150), who transferred it to the genus *Potidoma* within the family Montacutidae.

Epilepton clarkiae is the only known species of this genus described to date, and has been found on Atlantic (i. e. JEFFREYS, 1862; TEBBLE, 1966; VAN AARTSEN,

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MENKHORST AND GITTENBERGER, 1984; ROLÁN, OTERO-SCHMITT AND ROLÁN-ÁLVAREZ, 1989; SALAS, 1996), and Mediterranean (i. e. VAN AARTSEN *ET AL.*, 1984; SABELLI, GIANUZZI-SAVELLI Y BEDULLI, 1990; GIRIBET AND PEÑAS, 1997) coasts.

A new species assigned to the genus *Epilepton* has been found in a white coral biocenosis off Vallcarca (Barcelona, NW Mediterranean), at a depth of 250-350 m. This species is described and figured herein, and compared with *Epilepton clarkiae* (Clark W., 1852) and *Mancikellia divae* van Aartsen and Carrozza, 1997.

RESULTS

Family MONTACUTIDAE Clark W., 1852

Genus *Epilepton* Dall, 1899

Epilepton parrussetensis spec. nov. (Figs. 1-4)

Mancikellia divae van Aartsen and Carrozza, 1997 (*pro partim*)

Type material: Holotype (MNCN 15.07/4644), 1 sh., dredged, May 1995. Paratypes: type locality, 1 sh., 2 v. (MNHN), 3 v. (BMNH), May 1995; 2 v. (MNCN), July 1994.

Type locality: "El Parrusset" (41° 06' 59" N, 1° 54' 23" E), off Vallcarca (Sitges, Barcelona), on muddy bottom in a white coral biocenosis, at a depth of 250-350 m.

Material examined: *Epilepton parrussetensis* spec. nov., type locality, 2 v. for S. E. M., May 1995; type locality, 1 sh. (GG), 6 v. (AP), July 1994; La Herradura (Granada), 1 sh. (AP), 1 sh. (WE); 1 sh. Sicily (Italy) (Jeffreys collection, USNM 170443) (paratype of *Mancikellia divae* van Aartsen and Carrozza, 1997). *Epilepton clarkiae*, Vallcarca (Barcelona), site not specified, 70 m depth, 9 sh., 2 v. (AP), May 1994; Garraf (Sitges, Barcelona), site and depth not specified, 5 sh. (AP); "Roqueo Almirante" (Mijas Costa, Málaga), site not specified, 18-25 m, 4 v. (AP); Isola Ventotene (Italy), site not specified, 1 sh. (AP), 20 m depth. *Mancikellia divae* van Aartsen and Carrozza, 1997, 1 sh. (Holotype: USNM 170438). **Derivatio nominis:** The species is named after the type locality "El Parrusset", off Vallcarca (Sitges, Barcelona).

Description: Shell small (from 0.78 to 1.40 mm long), translucent, thin and fragile, equivalve; inequilateral, beaks in the posterior half, directed inwards; pale yellow color in fresh shells, or white in old shells. Prodissoconch small, pointed at the tip, with a well differentiated ridge surrounding the apex, measuring 380 x 210 μ m in the figured specimen (Fig. 3); surface smooth with fine concentric lines (Fig. 2). Periostracum indistinct. Ligament internal, below and behind the umbo (Fig. 4). Sculpture of numerous fine concentric lines. Growth stages clear, lacking radiating lines. Right valve with one cardinal

Abbreviations:

BMNH: British Museum (Natural History), London

MNCN: Museo Nacional de Ciencias Naturales, Madrid

MNHN: Muséum National d'Histoire Naturelle, Paris

USNM: U. S. National Museum, Washington D. C. (U. S. A.)

AP: A. Peñas private collection

GG: G. Giribet private collection

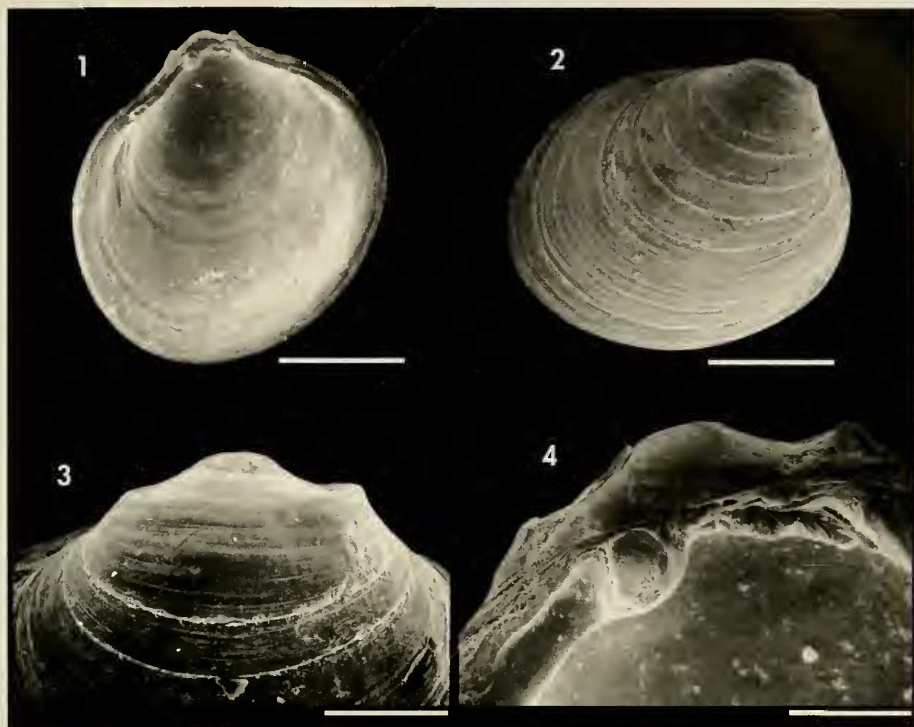
WE: W. Engl private collection

sh.: shell

v.: valve

tooth subcentrally (Fig. 4) and single anterior and posterior lateral teeth on a narrow hinge plate (Fig. 1). Left valve with single anterior and posterior lateral teeth on a narrow hinge plate, and a notch for the cardinal tooth. Adductor muscle scars indistinct. Pallial line indistinct, without sinus. Internal margin smooth.

Remarks: The new species is easily distinguishable from *Epilepton clarkiae* (Clark W., 1852), because its smaller size, more rounded and less flattened than *E. clarkiae* (see a S.E.M. picture in VAN AARTSEN *ET AL.*, 1984, Fig. 330). Furthermore *E. parrussetensis* lacks radiating lines, but growth



Figures 1-4. *Epilepton parrussetensis* spec. nov., El Parrusset. 1: right valve internal view, 1. 33 mm height; 2: left valve external view, 1. 30 mm height; 3: prodissoconch; 4: right valve, detail of the hinge. Scale bars, 1, 2: 500 μ m; 3: 150 μ m; 4: 100 μ m.

Figures 1-4. *Epilepton parrussetensis* spec. nov., El Parrusset. 1: vista interna de la valva derecha, 1. 33 mm; 2: vista externa de la valva derecha, 1. 30 mm; 3: prodisoconcha; 4: valva derecha, detalle de la charnala. Escalas, 1, 2: 500 μ m; 3: 150 μ m; 4: 100 μ m.

lines are more evident than in *E. clarkiae*. The prodissoconch of both species differ in shape and in the ridge only present at *E. parrussetensis*, making both species unmistakable.

In a recent publication, VAN AARTSEN AND CARROZZA (1997) described *Mancikellia divae*, a species with a similar prodissoconch to *E. parrussetensis*. Both species can be distinguished by the size of the prodissoconch, which is considerably bigger in *Mancikellia divae*. However, the authors did not report measures of the prodissoconch, and the SEM pictures presented does not allow to obtain accurate measures, because a dorsal view is necessary for this (see our Figure 3). Thus, we have used a measure taken between the two most

distant points of the ridge of the prodissoconch to compare both species, being this measure about 40 μ m in *M. divae*, while it is 293 μ m in *E. parrussetensis*. Furthermore, the bigger height/width ratio, as well as the clear concentric lines (visible both from the outside and from the inside) in *E. parrussetensis* contrast with the width and smooth surfaced shell of *M. divae*.

Distribution: Known from "El Parrusset" site (off Vallcarca, Sitges, Barcelona), La Herradura (Granada), Sicily (Italy), and probably from other localities listed in VAN AARTSEN AND CARROZZA (1997).

Habitat: At "El Parrusset" site, shells were dredged from sediments of a white coral biocenosis (sensu PÉRES AND PICARD, 1964), at a depth of 250-350 m,

where it is common. A detailed description of the type locality is given in GIRIBET AND PEÑAS (1997). At "La

Herradura", shells were found in sediments on a bottom of coarse sand and organic detritus, at about 20 m depth.

DISCUSSION

Mancikellia divae van Aartsen and Carrozza, 1997 is a very similar species to *E. parrussetensis* spec. nov., that we consider as a member of the genus *Epilepton*, *E. divae* (van Aartsen and Carrozza, 1997), because the similarity of the hinge structure. This was in fact recognized by VAN AARTSEN AND CARROZZA (1997: 31), that stated that '*a certain affinity with Epilepton Dall, 1899 cannot be denied*'. However, placement of small bivalves based solely on shell characters can be rather speculative, and we place this two species within the genus *Epilepton* provisionally.

Examination of the type material of *M. divae* at the USNM collection clearly evidences that the holotype, a fossil shell from the Crag (UK), is not the same species as the other reported live material in the original description of *M. divae* (VAN AARTSEN AND CARROZZA, 1997). The studied paratype from Sicily (and probably the rest of their examined material not figured in the original description) corresponds to *E. parrussetensis* here described.

This species has a restricted distribution at the Garraf region, where it has not been recorded on any bottom studied, other than "El Parrusset" (GIRIBET AND PEÑAS, 1997), though a similar sampling effort has been applied to many other stations. In the studied zone this species seems to be associated to the white coral biocenosis found at depths between 250 and 350 m. However, in La Herradura two complete shells have been found in shallower water, at about 20 m. There is also a valve from the Balgim station DW128

from Alborán Sea (35° 35' N, 03° 45' W) dredged at a depth of 480 m on a bottom of mud with dead corals deposited at the MNHN that could correspond to *E. parrussetensis* (C. Salas pers. com.), a similar habitat than that of "El Parrusset". From the material reported by VAN AARTSEN AND CARROZZA (1997), there is one valve from off Northern Sardinia collected between 350-400 m depth as the material from El Parrusset and the Balgim station DW128; while the material from Estepona (Spain) occurs at a similar depth range to that of the material from La Herradura. No bathymetric information is provided for the other material.

ACKNOWLEDGEMENTS

We are grateful to C. Salas (Universidad de Málaga) and S. Gofas (MNHN, Paris) for encouraging us to describe this new species, and to X. Turon (Universitat de Barcelona) for comments on the original manuscript. We thank M. G. Harsenewych (USNM) for loan of specimens, and M. Roca, a fisherman from Vilanova i la Geltrú (Barcelona) for providing sediments from "El Parrusset". We acknowledge C. Salas and two other anonymous reviewers for their helpful comments and discussion, that helped to improve this work. SEM pictures have been obtained at the "Serveis Científico-tècnics" at the Universitat de Barcelona. G. G. was supported by a Lerner-Gray Research Fellowship at the AMNH (USA).

BIBLIOGRAPHY

AARTSEN, J. J. VAN AND CARROZZA, F., 1997. On "*Lasaea*" *pumila* (S. V. Wood, 1851) and two new bivalves from European waters: *Mancikellia divae* n. sp. and *Kelliopsis jozinae* n. sp. (Bivalvia: Condylodactylidae and Montacutidae). *La Conchiglia*, 29: 28-34.

AARTSEN, J. J. VAN, MENKHORST, H. P. M. G. AND GITTENBERGER, E., 1984. The marine Mollusca of the Bay of Algeciras, Spain, with general notes on *Mitrella*, Marginellidae and Turridae. *Basteria*, suppl. 2: 1-135.

- DALL, W. H., 1899. Reports on the results of dredging, under the supervision of Alexander Agassiz, in the Gulf of Mexico (1877-78) and in the Caribbean Sea (1879-80), by the U. S. coast survey steamer "Blake", Lieut. -commander C. D. Sigsbee, U. S. N., and commander J. R. Bartlett, U. S. N., commanding. XXIX- Report on the Mollusca. Part II- Gastropoda and Scaphopoda. *Bulletin of the Museum of Comparative Zoology (Harvard)*, 18: 1-492.
- DEROUX, G., 1961. Rapports taxonomiques d'un Leptonacé nou décrit "*Lepton subtrigonum*" Jeffreys (nomen nudum -1873). *Cahiers de Biologie Marine*, 2: 99-153.
- GIRIBET, G. AND PEÑAS, A., 1997. Fauna malacológica del litoral del Garraf (NE de la Península Ibérica). *Iberus*, 15 (1): 41-93.
- JEFFREYS, J. W., 1862. *British Conchology*. van Voorst, London.
- PELSENEER, P., 1925. Un Lamelibranche commensal de Lamelibranche et quelques autres Lamelibranches commensaux. *Travaux de la Station Zoologique de Wimereux*, 9: 164-182.
- PÉRÉS, J. M. AND PICARD, J., 1964. Nouveau manuel de bionomie benthique de la Mer Méditerranée. *Recueil des Travaux de la Station Marine d'Endoume*, 31 (47): 1-137.
- ROLÁN, E., OTERO-SCHMITT, J. AND ROLÁN-ÁLVAREZ, E., 1989. Moluscos de la Ría de Vigo II. *Thalassas*, suppl. 2: 1-276.
- SABELLI, B., GIANUZZI-SAVELLI, R. AND BEDULLI, D., 1990. *Catalogo annotato dei molluschi marini del Mediterraneo*, vol. 1. Libreria Naturalistica Bolognese, Bologna, 348 pp.
- SALAS, C., 1996. Marine bivalves from off the Southern Iberian Peninsula collected by the Balgim and Fauna 1 expeditions. *Haliotis*, 25: 33-100.
- TEBBLE, N., 1966. *British bivalve shells. A handbook for identification*. Second ed. The Royal Scottish Museum, Edinburgh, 212 pp.